

E 449

.E94

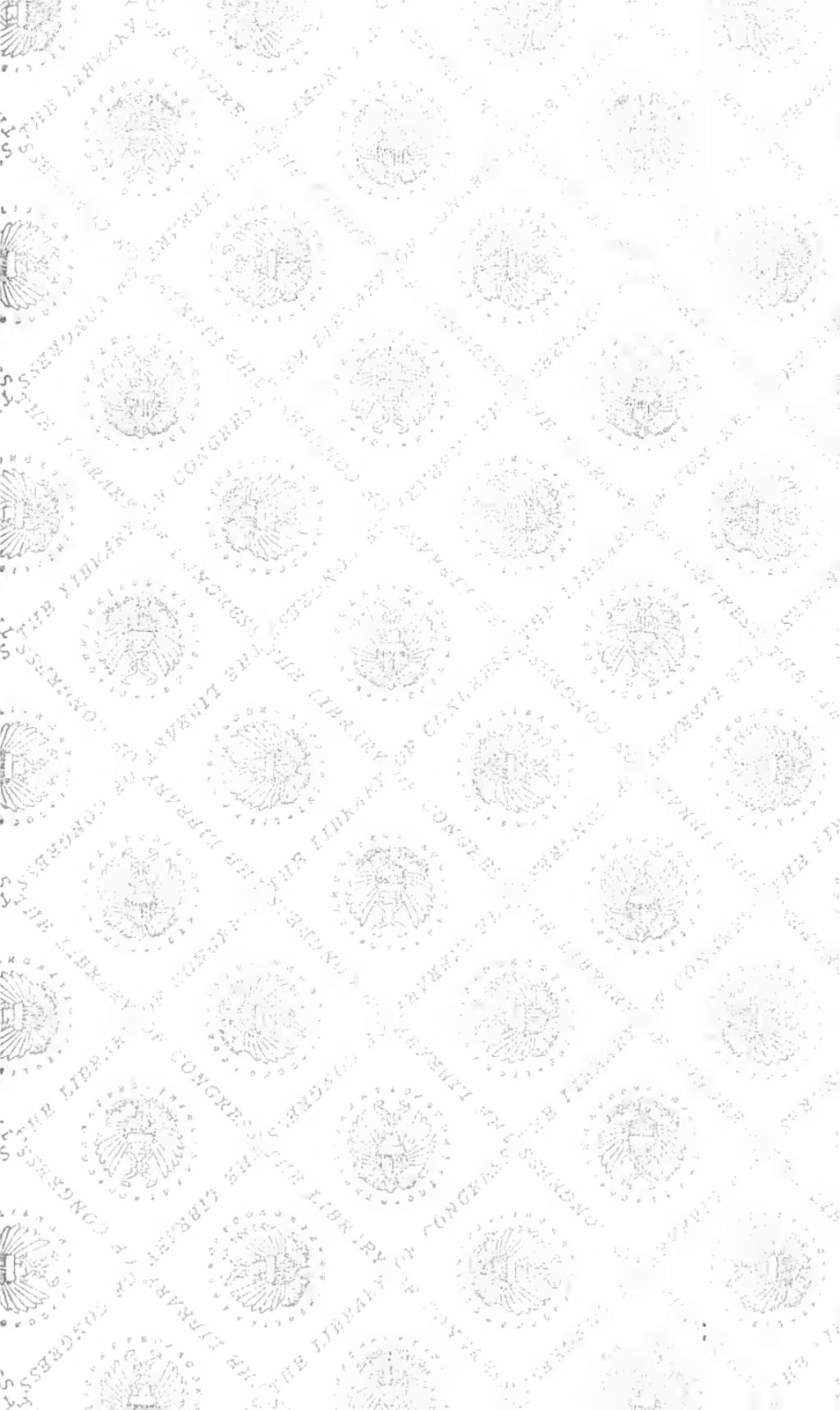
Copy 2

LIBRARY OF CONGRESS



00001737673







# INORGANIC FORCES

ORDAINED TO SUPERSEDE

# HUMAN SLAVERY.

BY THOMAS EWBANK,

AUTHOR OF "HYDRAULICS AND MECHANICS," "THE WORLD A  
WORKSHOP," "THOUGHTS ON MATTER AND  
FORCE," ETC.

[ORIGINALLY READ BEFORE THE AMERICAN ETHNOLOGICAL SOCIETY.]

NEW YORK:

WILLIAM EVERDELL & SONS, 104 FULTON STREET.

1860.

✓ 4.4.9  
✓ 2.2.  
✓ 1.1.

ESTEED, according to Act of Congress, in the year one thousand eight hundred and sixty,

By WILLIAM EVERDELL & SONS,

In the Clerk's Office of the District Court of the United States for the Southern District  
of New York.

—  
J. H. TOBITT,  
COMBINATION-TYPE PRINTER,  
1 *Franklin Square, N. Y.*  
—

## INORGANIC FORCES, ETC.

---

This Essay consists of

- I. Thoughts on Slavery irrespective of its political and moral relations, and
- II. On the plenitude of the earth's store of cheap inorganic forces for superseding it, and meeting at every stage of progressive civilization fresh demands for agricultural and mechanical motors.

---

### I.

It may safely be averred that most contentions, political, religious, social and civil, arise from contracted ideas of the present condition of things, and from isolating them too much. By looking beyond them, we should perceive that existing evils are incidental to progress, and doomed to disappear as society advances. It is microscopic views of the conflicting scenes of life that lead the melancholy to mourn over them, and sometimes to wonder how Providence can permit them.

Of all subjects of discussion, it is not easy to name one to which moral, scientific or philanthropic sagacity can be more profitably directed than that of human labor, or to a more exciting one at present than that of forced labor. Passing by its current evils, Negro

Slavery must be considered either an artificial excrecence on the face of society, or a result of natural laws. If the former, it may and ought to be suppressed; if the latter, it exists independently of its abuses and can only be removed in accordance with Nature's arrangements for that purpose—if such she has made.

Slavery among the Greeks and Romans, and their predecessors and successors, was widely different from what it is in America. It was chiefly the enthralment of men of their own race, while with us it consists in the subjugation of an inferior and foreign one. Among the first nations of old, demands for labor appear to have been adequately met by natives of the soil, and hence negro slaves were comparatively very few; so few that they were in no wise distinguished by either discipline or laws from white helots. But another state of things was revealed in the discovery of America, and one unexampled in the history of the East. Here, a hemisphere was suddenly opened to human enterprise, without a predial population, for the Indians preferred extermination to subjection to systematic labor; and they still prefer it through every latitude, the few meagre exceptions having no sensible effect in arresting their progressive, and it is to be feared their utter extinction.

Everything that lives has to labor for its living. Bodily strength or power, adapted to the diverse conditions of life, is a natural necessity, which we have in common with the brutes; but a radical difference exists between them and us in this, that while they need no more than as individuals they inherit, we require additional quantities from external sources to meet exigencies of social and civil life. To work, is therefore man's destiny, to call in other forces to assist him, his privilege. But for this he had been made stronger, or the work required of him had been less. From the general character and diversity of animals he can press only a few into his service. At the most, we derive but an inappreciably small fraction of the muscular energy hourly expended by the earth's living tribes. From the leviathans of the ocean we obtain none, nor from the strongest of birds, nor from the vigorous of carnivera among quadrupeds.

The ox is worked but little, and in some countries not at all, the ass and mule are good slaves in their way, but the horse is mostly relied on in the temperate and cooler zones, and even there the expense of keeping him prevents many from employing him.

As a general principle the cost will always determine the chief labor employed. The cheapest and most accessible will be most in demand. It was because intelligence in human toilers enabled them to do work which animals could not perform, except through the medium of mechanism, that the enslavement of the more easily subdued quadrupeds was followed by that of the least resisting portion of our own species. It is so still.

To observing minds the thought can scarcely avoid occurring, that, in a matter so widely affecting the Creator's administration of the world, as human vassalage, provision must have been made for its incorporation into the system, if it be, what its upholders insist, of divine origin, and that nothing more is needed to settle the disquieting topic, than to determine this point. But upon it the positions of the disputants are opposite as the poles, so that the questions, Is the principle of negro bondage sanctioned by nature? If yea, what is to be its duration? Its terrestrial boundaries? And the social and civil regulations that should govern it?—are yet to be settled.

There is much uncertainty, not to say indifference, respecting the laws that govern the affairs of the world. Few suspect that the great movements of our species are as much subject to them, as those of the inferior creatures. To partial observers, every thing appears at sixes and sevens—a mighty maze without a plan; as if the Earth, after being fitted for, and stocked with, inhabitants, was left without constitutional and conservative provisions—an idea which can only enter the heads of those who, like ants, look not beyond their own little hillocks and movements—or those who imagine the earth consists of conglomerate masses thrown together without order or systematic arrangement.

For lack of a better acquaintance with the subject, we may be

mistaken in thinking the primary cause of slavery has been somewhat avoided, and that matters outside of its acknowledged relations have been overlooked, which have a potent influence over it. Human thralldom is not a thing of yesterday. The world has been accustomed to it from the beginning. Dating from ages anterior to written history, and in vogue among all people, it has become a kind of second nature, if it be not a natural institution. At all events, nature, or if you please the science of nature, must be consulted about its abolition, as well as international law and the decalogue, for it certainly is as much a question of natural philosophy as of moral and political economy. Scheme, and quarrel, and fight about it as much as we please, it can only be permanently settled in accordance with principles independent of Party and even of national sympathies and antipathies.

The dictum, acceptable to many, that "negro slavery is just and beneficent" should have been qualified. As a general principle it sanctions the introduction of slave labor to wherever its advocates may choose to carry it, and it urges its extension, for if it be just to establish it, it is wrong to neglect it, and criminal to abolish it. Then, if it is not to be dispensed with at present, what of the future? As demands for labor inevitably become more pressing as society improves, the slave trade, if nothing intervene, must increase and keep increasing, for it is folly to hope that under such circumstances either political or moral influences can arrest it—not even if they were, as they are not, uniformly opposed to it. The prospect of its extinction would seem therefore hopeless, for, supposing the earth's wild lands eventually brought under cultivation, the same number of laborers would be wanted to keep them in cultivation.

In the warmer regions especially, it is contended that negro slavery can never cease, for if cotton, and sugar, and other staples of the tropics should lose their importance in the markets of the world, other products will succeed them equally requiring the forced labor of blacks. Indeed, the perpetuation of slavery in one

form or another is inferrable from the writings of naturalists. Tracing it to diversities of physical and mental structure, in connexion with an universal instinct of the strong to subjugate the weak, and perceiving no indications that nature contemplates any change in these respects, the conclusion with them is that the effects will be as enduring as the cause.

This leaves the negro not a glimpse of hope in the ages or epochs to come. It limits neither the range nor the direction of his thralldom. If such be really his fate, he is to be pitied, subject too, as he must be, to the shackles and lash. Called in to overcome natural habits and instincts, these will be deemed as requisite in the future as in the present, for that which is innate in the race is not to be extirpated by external appliances to individuals.

Natural justice teaches us that negro slavery if just and beneficent anywhere, can only be so in climates congenial to negro constitutions, and where the labor is not destructive of health, nor in amount preternaturally exhaustive of life, nor enforced under rules prohibitive of mental improvement. No system can be a right one that does not recognize and treat them as men, however low in the scale of humanity masses of them may be.

Nature is the exponent of the deity. Let us therefore consult her. Unless we greatly misunderstand her, she assents to what follows:—

The earth was designed for a working establishment—a scene of varied and ceaseless activities. It is a plantation to be put in and preserved in fruitful condition, and a factory of miscellaneous things, to be kept going, with facilities to circulate both products and goods. The basis of the popular triad—Agriculture, Manufactures and Commerce.

The prosperity of the establishment as a whole depends on the extent to which these departments are cultivated. Every section thrives as it fosters one or more of them, and degenerates as it neglects them.

As the work requires a constant outlay of forces, adapted to

meet innumerable exigencies and contingencies in each department, a series of them is provided, beginning with human power, that by the use of it experience may be had to manage others. The great business of man as the head or lessee of the establishment may be resolved into the proper selection and employment of these.

Work so diverse in its nature, minute in its details and comprehensive in its relations, requires diversities in the characters and capacities of the workmen, and these are also provided by a law of the earth's organization. She is variously constituted. Her climates and products differ extremely between the equator and the poles, her vegetable and living products, being adapted to influences to which they are indigenous. We all know how heat and moisture vary with geographical position, and how they affect man's muscular strength, hence to meet this and other exigencies—

Mankind is made up of races that vary in physical and mental structure, to accord with the diverse conditions of the earth's great sections, each constituted to flourish best in climates akin to its native one. Uniformity of race can only agree with an uniform earth, and therefore diversities of races must be as lasting as the varied constitution of the earth.

Unity pervades creation, not less in its parts than as a whole. The various countries form one earth, and the diverse races of men one species.

Of the number of races naturalists are not agreed, nor yet of the smaller divisions. Instead of presenting a constant and uniform character, each consists of a group of varieties or families, ordained to meet the minor geographical and physical conditions of their primary locations. Linnæus divided the species into five races, Buffon into six, Cuvier into three. Others have run the number up to fifteen. Dr. Pickering, of the U. S. Exploring Expedition, makes it at least eleven. The classification commonly accepted enumerates five races and twenty-two families. It is sufficient for our purpose.

The *Caucasian*—or white race, containing the Caucasian, Celtic, Germanic, Arabian, Libyan, Nilotie and Indostanic families.

The *Mongolian*.—the Chinese, Indo-Chinese, Polar, Mongol-Tartar and the Turkish families.

The *Malay*—Malay and Polynesian Families.

The *American*—American and Toltican Families.

The *Ethiopian*—Negro, Caffrarian, Hottentot, Australian, Alforian and the Oceanic-Negro Families.

Incertitude about the number of races and sub-races arises from the difficulty of ascertaining where one commences and terminates. There are no abrupt beginnings and endings in nature. Gradation by imperceptible degrees is a general rule, while the range open to our perceptions is, in all things, very limited. It is only when the changes become palpable that we acknowledge them. The orders, classes, families and other divisions of plants and animals may be obviously distinct—as much so as colors in the prism, and yet the precise lines where they join are no more to be detected than those of the prism. So it is with our own species. The difference between the races most apart every one perceives, but not where one blends into another.

Diversity of races was necessary to the dispersion of man over the establishment, and to give him full possession of it. But for them, the greater part would have remained unknown, and its resources been lost. As rivers and their tributaries are requisite to fertilize the earth, so are races and sub-races to people and improve it. One river cannot water it, nor one people occupy it.

As with animals, one race cannot perform the functions of the others. If it could, there had been no need of the others.

As already observed, congenial locations are assigned to each, beyond which emigrants will be aliens. Within certain parallels the white race will always flourish most, and so with the negro and intermediate races. The people of Europe would never exchange it for Africa, nor those of India barter it for Lapland or Canada. Thus, while every race has its appropriate work to do, it has the most eligible place to do it in.

This arrangement does not imply, as might hastily be inferred, that each race should be confined within its original boundaries, because there are, and have ever been, vast regions in congenial climates, lying waste for lack of cultivators. But independent of that, emigration is an active and indispensable element in the economy of the planet. Things would stagnate upon it, were it not for the circulation of its occupants. Its surface, like that of the ocean, is designed to be agitated and crossed by living streams and currents, of varied and ever varying velocities. Voluntary emigrations have always obtained, and are now proceeding on scales perhaps not larger than those vast involuntary removals which characterized the policy of the conquerors of old—showing that the most conflicting of human acts and influences do not interrupt the progress of natural laws. Vegetable and animal products differ in different countries, so that what one people lacks another can supply, and thus is established a universal and perpetual incitement to travel and commercial exchanges.

Though perfectly balanced, the professional relations between the races have hardly been explained. Perhaps it is too soon for that. But that each has its assigned task in erecting, supporting and enriching the great social structure, there is no doubt. That which is to extend over all is to be the work of all.

To carry on the work to the best advantage, one race is designed to be foremen to the others. This is one of the results and purposes of inequality in them. There can be no progress anywhere, or in anything, without external elements to start and maintain it. Every movement to be general must first be partial, and to be effectual it must be gradual. “Throughout the visible universe an universal order and gradation in the sensual and mental faculties is observed, which causes a subordination of creature to creature”—and man to man. Every institution must have its managers, every ship its officers, every society its teachers, every army its leaders.

The white race is the leading one. The others are stationary, and always have been, where its influence has not reached them.

When would civilization have come if its rise and progress had been given in charge to any of them, and could it have ever come had it depended on the lowest? The *idea* of progress is peculiar to the Pioneer race. In this matter the world is a Lancasterian school, in which the highest class furnishes instructors and monitors for the lower ones.

The natural order of the races is indicated by the features, complexion, the hair, &c. Color is, with some, the chief test, beginning with what is called white and deepening in shade through yellow and olive to ebony and jet. Whatever the test is, the white man is acknowledged to stand at the head of the series, and the negro and kindred castes at the bottom. As our present business is with these two, there is no need to refer to the intermediate ones. While physical inequalities in the races are admitted and dwelt on by writers on the natural history of the species, there are those who contend for an equality of intellect in them all. Contrary to analogy, to history and observation, they award the same amount to the lowest and to the highest race, as if diversity of physical did not inevitably imply diversity of mental structure, and as if the economy of our orb did not require it in races as well as in individuals of every race. They, moreover, overlook the absolute universality of the principles of variety and gradation. It would be an anomaly if these did not pervade the mental as much as the bodily formations of men, and not merely the races as a whole, but each race in itself. It is inconceivable how the extreme diversities of labor required of our own race, could be carried on harmoniously, or at all, with uniformity or equality of intellect, or of intellectual capacity. The distinguishing feature of the negro race is its mental inferiority, and hence its unbroken association with barbarism. Individual exceptions affect not the law, except to confirm it. Were the negro not intellectually below the white man, it would be impossible to enslave him. The origin of power is in the mind, not in the body.

It is a cruel satire on the negro race to assert that they are equal to the highest in intellect, and consequently in capacity for improve-

ment. If they had the power of progress given them what have they done with it, since through the lapse of ages they have been and still are immersed in barbarism. The blame, if anywhere, is with ourselves. They are waiting for the strong race to help them up.

The mission of the white race is to extend civilization over the earth. That is, to extend to the other races its own achievements in arts, manufactures and commerce, that they may become active partners in the business and sharers of the profits. In order to do this, appropriate portions of the work must be performed by them. In the case of tropical and semi-tropical regions there can be no doubt about this. To reclaim them, the labor of negroes is indispensable, and hence it would seem that they must do the work voluntarily, or involuntarily, since they, and they only, are specially constituted by nature to do it.

Those that deny normal inequalities in the races, must admit that there exist ordinances associated with climate, which exercise a controlling influence on human as well as on animal labor, and that there is no ignoring the fact of the past and the present predominance of the white race—that it *is* the Leader of the rest, and that among the latter are tribes peculiarly fitted, by low organizations, for the lowest kind of labor: in consequence of which they have been subjected to it, right or wrong, from the earliest times. Then the other alleged fact, that the Pioneer-race cannot carry civilization over tropical and equatorial regions without the aid of blacks; and though this does not necessarily imply the enslavement of colored laborers, it is contended that, if the richest portions of the earth are to be reclaimed from primitive wildness, they must do the work.

It does not follow from this subordination of one race to another, that Nature sanctions our prevailing slave systems. Her code is very different to most of them. There can be nothing harsh or inhuman in it. It is doubtful if it contains the word ‘slave’—certainly not the popular idea and practices connected with it.

As the palm-tree cannot flourish in high latitudes nor the fir-tree

in low ones, so by a general law, black races deteriorate in vivacity and vigor as they recede from the tropics, while the physical and mental energies of white men diminish as they penetrate them. There can be no interchanging or intermixing the fauna and flora of hot and cold climates without dwarfing both. Nature has therefore ordained a dividing line, or lines, between white and black labor which cannot be ignored with impunity, whether to balance power between States, or for any political purpose whatever. As when two confluent rivers join, or where the edges of the hot gulf stream touch the cold Atlantic, whirls and eddies cross and recross the line of separation without displacing it, so local agitations will, here and there, drive negro labor over its natural boundaries, but cannot keep it from returning.

Without presuming to indicate the line (which can hardly coincide with any one parallel of latitude) it certainly is improperly invaded where the dark children of the sun are poured into the special homes of the white race. Wherever this has taken place the penalty has been enforced, and though pride may for a while be blind to its effects, it is always evinced in the *absence of progress*, the universal and everlasting test of degeneracy.

While there are those who from the conviction of the heart rather as we think, than of the understanding, denounce negro thraldom in toto, there are champions of it, who apparently more from the impulse of the passions than of the judgment, insist on their right to take it as far North as they please. Surely, the equatorial, tropical and semi-tropical regions ought to suffice for it. Nature has ordained it to be confined within them, and they who force it beyond them, can only do so with loss. You may attempt, says the proverb, to drive away Nature by violence, but she is sure to return.

The doctrine that upholds negro slavery, irrespective of geographical limits, has recently sprung up, and has led to marked changes of sentiment in living politicians. But a few years ago, some of Virginia's chief sons maintained that she could never be in vigorous health till she got rid of, what they called, 'the black vomit,'

and now her welfare is made to depend on it. Without it she will die! The former sentiment coincided with that of Washington, Jefferson, Patrick Henry, Madison and other natives of the State, that slavery in *it* was a wrong to the enslaved, a peril and mischief to the enslavers, and a blight to the community. But they are said to have been mistaken because they lived and died before the subject had been thoroughly discussed in view of Scripture and reason.

The error lies in the unlimited application of the principle, as if that which is true in the abstract must be practically so in all places and under all circumstances. By the same rule negro slavery may be as strongly justified by reason in Greenland as in Louisiana, and by Scripture in Lapland as in Brazil. The great men just named formed their conclusions from long experience as planters and slave-holders, and from their knowledge of the comparative value of white and black labor in their native clime. We cannot but believe that their opinion will be found fully sanctioned by Nature, and that ere another generation passes away, in obedience to a higher law than any in their statute book, her people will declare her a free State; as other States have unwittingly obeyed it before them.

It is a weak point in the slaveholder's code, to claim a right to carry the system deep into the temperate zones, since their occupants have an equal right, at least, to say they shall not; otherwise, it would depend on the will of the former whether any part of the earth shall be reserved for white labor—that is, for the perfect development of the white race.

It was therefore a grave political error to break down the Missouri Compromise Line, and it is perhaps an equally grave one to delay its restoration, or the adoption of another. Were Southerners to succeed in forcing slavery over it, the recoil would inevitably push the line further South; for there is an influence at work in this matter that no legislation can arrest.

Nature and sound policy are never at variance; and we may as

well attempt to drink up the sea as to succeed in opposition to her. All the troubles in the world arise from fighting against her. There are no natural evils in reality. It is blasphemy to make the assertion. In few things does man play the fool more egregiously. We abuse Nature's gifts and then call them evils.

The subordination of one race to another is irrespective of the modes in which it may be enforced. Men violate Nature's statutes as they violate their own, but do not thereby abrogate them. Harsh and mild treatment of slaves, arising from diverse dispositions of masters, are moral questions that no more affect the principle than parental severity affects that of filial obedience, or cruelty to animals our dominion over them. Hence, if those who oppose negro vassalage *per se* hope to destroy it in its abuses, they must be disappointed. Every principle in physics and ethics has been profaned, and some to a greater extension of human suffering than in negro servitude. Forces from the expansion of airs are probably ordained to be the chief among the agents of progress through all coming ages—Nature's greatest gifts to our species—and one has been prostituted to the destruction of life surpassingly appalling, and still is so with increasing effect. Society itself is a divine institution, but who would destroy it to get rid of evils incident to it? The laws of nature are necessarily independent of moral laws.

The subordination of the lowest race, being a principle of nature, is not amenable to human jurisdiction, but the abuses of it, by slave owners and traders, are human acts, which human laws can reach and correct.

There is no isolating any of the races. They are members of one family, bound inseparably together in one concern, and moving to a common destiny. The negro is as necessary to complete the series as the white man. We cannot fulfill the charge given to us without his assistance, nor can he do without us. We originate, he imitates. We excel in one and he in the other. He is not to be treated as if the characteristic element of progress was not in him. In this respect, and others, he differs from us only in degree. With him

the germ is slower in its growth. The development of high intellectual endowments is retarded, that he may contribute labor incompatible with them.

Conversation between individuals stimulates thought, elicits new ideas, and inspires fresh aims. This principle of reciprocal relation pervades every division and sub-division of the whole species. It begins with individuals and ends with the races. They are to act and react on each other in like manner. With them it is but conversation expanded.

The races are not to commingle and be dissolved in a common stock. This is a corollary of the preceding. If the species was to be homogeneous its elements had not been dissimilar, but, as already intimated, not till the earth's sections become assimilated in climate and products, can the fundamental law which maintains variety throughout the living kingdom be cancelled, or ignored. Amalgamation of white and colored blood is bad enough on limited scales were it possible to become general, the most disastrous and revolting results would follow—an ineradicable physical and mental leprosy would be entailed on the whole, and the beacon or standard of progress would vanish. For with the leading race it would be sunk out of sight in the mongrel and conglomerate mass. Incitements to progress there then could be none. All ideas of it would be gone.

To promote the fusion of the highest and lowest races is an unpardonable crime against the species, and treason against the Divine administration of the planet. Like other crimes, it carries its punishment with it. Besides what has just been stated as a general result, white blood rebels in the mulatto. It resists slavery in proportion to its infusion, and is ever ready to throw off the yoke under the most desperate circumstances. It engenders the fiercest feelings, and passions, that have been characterized as demoniacal.

Races and nations must do the work assigned to them or give up their possessions to those that will do it. The law on this point, though obviously required to preserve intact the economy of the

planet, is calculated to awaken sympathy for the sufferers. The American race and some families of other races are examples.

Such are some of the propositions sanctioned by nature. If any appear doubtful, we think that can only be due to the imperfect manner in which they are presented. We therefore cannot resist the inference that human vassalage is ascribable to a deeper agency than man's; hence its universality as an element of society from the beginning. That it is intended to accomplish a wise and beneficent purpose, and to be mutually advantageous to enslavers and enslaved cannot be questioned.

We hold then, that opponents of negro thraldom *per se* cannot put an end to it by any way they have yet proposed because, notwithstanding their sympathy for the oppressed, nature is against them; but that they will succeed in repelling it from chief portions of the temperate zones, for she is there with them.

---

### III.

ADMITTING that much of modern slavery is an abuse of the natural subordination of one race to another, unless nature has made arrangements for its ultimate abolition, we must accept the dictum of those who maintain that negroes are ordained to be helots forever.

With many, we have, as already intimated, no faith in its extinction by moral suasion or penal statutes. Both have long been tried, and to little purpose, except to show their insufficiency. The evil sought to be removed lies deeper than they can reach. They may palliate but cannot eradicate it. Its roots, extending to the lowest depths of man's selfish nature, must cease to be nourished before they can be torn up. As long as it is profitable, it will live. To kill it, something better or cheaper must take its place.

To the statement, that before planters will give up slave labor

they must be provided with another, abolitionists reply, that it is not sought to take the slave from his work, but simply to make him a free workman. Be it so. That may be partially carried out. It cannot become general, till the moral organs everywhere preponderate over the animal ones. We think not then, were even that to come to pass. Still, we believe the salvation looked for by the friends of the negro will come, but not from the quarter whence they expect it.

As we cannot reconcile the perpetuity of human degradation with our ideas of the Creator, whose protecting care extends over all men, we have no hesitation in asserting that there must be means provided for the elevation of every race, though neither naturalists nor statesmen may have found out what or where they are. We assume *a priori*, the proposition, that the entire species is to be relieved from excessive labor in connexion with its mental and moral elevation, and consequently that there exist agents in the natural world for superseding it. And, from the same consideration of the universal parent, we moreover hold that animals enslaved by us will, by the same agents, be proportionally relieved. It can form no part of His plan that any of them should be prematurely exhausted of life, as too many of the noblest of our quadrupeds are—their very heart strings strained to breaking by work imposed on them.

Let this be conceded, and it follows that, as we of the white race are placed at the head of the earth, and its vegetable, mineral and living products subject to us, the continuation of the harsh treatment of animal and human laborers, rests with us. This momentous responsibility is hardly suspected because, however grating to our pride, the most advanced of nations are only emerging from ages of ignorance: upon them the light of science is only beginning to dawn. The true relation of man to the earth, the professional character he is to sustain upon it, the uses he is to make of its materials, and the great things he is to accomplish with them, have yet to be opened and proclaimed.

Progress, general though not uniform, is the law of the earth's

organization and our own. Her stock of materials can never be used up because they are being ever renewed ; and, as there are no limits to their properties and uses, the arts are to become indefinitely extended, and consequently corresponding additions to the stock of industrial labor called for. The work of the world must be done, and, as it is constantly swelling in amount, no deduction from current sources of labor can possibly be hoped for. On the contrary, the general awakening of nations to new branches of industry and trade, denotes that, if fresh accessories to or substitutes for slave labor be not introduced, the time will come when all Africa will be unable to raise negroes enough to meet the demand.

There are moral diseases which yield only to physical remedies. By overlooking this fact, vast amounts of philanthropy are expended to little purpose. The trade in ardent spirits, ales, wine, tobacco, opium, and all kindred things has not been diminished by temperance crusades. When it fell off in one it rose in others, and such we presume, will be the result till cures are discovered in innoxious or less noxious stimuli. So also with Negro slavery. Neither it, nor its worst features, can be suppressed till other agents of labor are ready to take its place.

But are there such ? If the growth of society requires them, beyond all controversy, Yes. Whatever that calls for is attainable, no matter how novel or startling, or even impossible it might seem. Only make it fairly known and (as William Howitt has well observed) the immense mass of talent, energy, learning, and genius, slumbering in the great chaos of human society *when quickened by the breath of high occasion*, starts up, and is ready to carry to its accomplishment every mortal enterprise. So it is with the great agents of labor.

There is no fear that negro servitude can be permanent in the temperate zones, but then can it ever be superseded within warmer parallels, for it is there that it is destined to be concentrated ? We believe it can and eventually will be, and by a class of forces which are now only beginning to be evolved.

Though we do not pretend to point out in them an *immediate* cure for the evils of slavery wherever it prevails, we profess to indicate where the only radical, and final one is to be found. It has already removed some minor sores, and is a specific for the greatest. Of itself it requires no delay but is simply waiting for skill to administer it. As with other specifics the difficulty will be in getting the world to believe in it, but that cannot be done without inviting public attention to it. As for indifference, opposition and ridicule, which novel projects are almost sure to meet with, they never yet prevented the success of aught that deserved it; and in the present case they are lighter than air, since it is nature herself that is the projector.

It was remarked on a previous page that for the work given to man diverse forces are provided. It is to them we are now to refer. They are comprised in two general divisions, *Living* and *Inanimate*, each consisting of two distinct varieties. The first of human and animal forces; the second of forces excited by nature, as running water, and such as are artificially awakened, as steam, explosive compounds, &c.

As might have been expected, there is a regular order in the realization of these forces. Differing in forms, intensities, and applications, such only can be used as are suited to the condition men are in as regards mental and material progress. In the early stages of society the simplest only can be managed. Savages can do nothing with steam, or semi-savages with cognate first movers. It was necessary that man should begin the work with his own force, that by the exercise of it he might be prepared to employ others.

Thus human labor preceded that of animals, their employment suggested the taking advantage of fluid currents, and they opened the way to the evolution of forces from matter at rest. Little stretch of thought was necessary to make an animal drag a load after him, or to bear another on his back; somewhat more to adapt vanes to

wind and running water, and turning to account systems of revolving levers, but had the motive powers stopped there, the modern world had not advanced beyond the ancient one. For to keep moving, another class was indispensable, consisting of such as are not limited to time and place, such as man can call up for himself wherever and whenever he pleases, and excite, and extinguish at his will.

Living motors are the poorest; insensible ones, artificially excited, the last and the best. The former are delicate, easily deranged, require stated and oft recurring periods of rest, are limited in their powers of endurance, and the amount of work they can do, while the latter are in these several respects the reverse. With living forces man passes his novitiate, with these he fairly enters on the great work before him, no longer depending on those disclosed by nature, but taught by her now to find out others for himself.

Few have yet been evolved, but judging of the rest by what *two* in their veriest infancy have done, who can anticipate the epochs which practical science is destined to open! So much of living force has been already replaced by one of them—steam—that with it, the progress of civilization would not now be retarded were all our working animals to become extinct. It would be but the exchange of one agent of labor for a better.

It is needless to allude to motive-agents that are destined to follow steam. Some are imperfectly developed, others perhaps not suspected, while of those that are known, none are sufficiently subdued to be profitable, except *electricity*, which, as a messenger, transmits thought with a velocity bordering on volition, and which acts as a gilder and plater of the metals, a multiplier of engravings, medallions and the most delicate gems of ancient and modern art. Should it become tamed into a common working force, it will perform functions for which steam is imperfectly adapted. No one force can do every thing.

Is it asked—by what means are new motors to be discovered? By consulting nature with whom they all are. With her fervent worshippers she has no secrets. With them she is as explicit on the development of physical power—occult and mysterious as it may seem—as on anything else. It is from her we learn not only that bodily labor is the outlay of force, but that *all force is derived directly or indirectly from HEAT*; animal force just as much as any other. Hence it is, that whatever may be the temperature of the media in which living creatures dwell, they are furnished with apparatus for generating a higher one within themselves, for the purpose of operating their organs of motion; and, as in our motive engines, the heat is generated in parts specially designed for it—that is, the food-consuming apparatus is confined, in each species, to one locality, whence the force is transmitted to the colder extremities.

The universality of heat as the source of physical power is confirmed by every natural and by every artificial motor. We know not one of the former which does not expire when its heat evolving organs have ceased to act, nor one of the latter that does not become helpless as a corpse under the like circumstances. In both cases the most active and powerful consume the most fuel. All food is fuel; the mode of consuming it being, as might be supposed, different in living than in insensitive motors. Does not the engineer stop a locomotive to take in wood and water for the same reason that you stop to bait your horse, or to dine when the strength of your previous meal is expended.

Force, then, being derived from heat, the all important inquiry is, What are our sources of heat? The answer should, in some degree, make manifest the intentions of the Creator in the constitution and working of our orb—and it does. The chief sources are the earth's forests and her coal-fields. The latter are to be found in all lands and are utterly inexhaustible. So much so, that could the imagination reach a period in the future sufficiently remote to give time for the consumption of the present stock, another would even

then have been matured. We have therefore, no room to doubt that this mineral is ordained to be a chief if not *the* chief agent of industrial forces; and may we not add, through periods of time commensurate with those that were required for its preparation and stowage.

Does not this explain to us why a succession of geological epochs was employed in elaborating it in various qualities, laying it up in separate strata, preserving it unmixed with foreign matters, and providing for its being pushed up within human reach as human wants might require it—because of its paramount importance to man through the whole of his career.

The coal trade of the world is scarcely begun, but even now the mineral may serve to indicate the condition of nations. Great Britain is counted the richest, and she has writers who assert that the true source of her wealth is her coal. It is unnecessary to say that compared with other coal-producing countries, she ranks the first in the quantity she mines. She now raises 75,000,000 of tons annually, of which about one-tenth only she exports. Her coal formations occupy an area of 11,859 square miles. *Belgium*, in 1856, raised 8,409,330 tons. *France* consumed less than thirteen millions, of which five millions were imported. *Prussia* raised four millions, *Austria* less than one million, and *Spain*, though possessing 3,408 square miles of coal lands, raised scarcely any.

What relation there is between the rising power of the people of the United States and the progress of their coal trade, may be surmised from the following table of quantities extracted, chiefly from the Pennsylvania mines.

1820	(first year of mining)	365	tons.
1825	-	60,538	"
1830	-	132,826	"
1835	-	610,727	"
1840	-	1,027,241	"
1845	-	2,143,530	"
1850	-	3,736,184	"
1855	-	7,565,980	"

The coal crop of the United States for the year 1858 including bitumens and all other varieties was estimated at 14,685,820 tons.

What it has got to do on this part of the earth may be rudely guessed at, from the fact that while its deposits in Great Britain, Spain, France, and Belgium, do not exceed, in the aggregate, twenty thousand square miles, its area within the United States—of course saying nothing of Mexico on the South, and Canada and Nova Scotia on the North—is already estimated at *two hundred thousand square miles*. A national inheritance of inconceivable wealth and power.

Of the coal deposits in Russia, Poland, Denmark and Sweden we know but little, and still less of those of India, China, and other parts of Asia, of those of Japan, New Zealand, South America, Africa, and Australia.

Of the earth's cargo not more than broken samples have yet been withdrawn, and only a few of them. When she "breaks bulk" the power of the world will be recognized in coal and its science in iron.

The value of the revelation—that all forces are resolvable into inorganic elements and obtainable in unlimited quantities—who can estimate! To it is to be ascribed the start which civilization has taken in the present century, and to it primarily will be due all future progress. It has opened to our species a series of acquisitions whose benefits no language can over-rate. It shows us that we have the power and the means of doing the world's work, without oppressing our own species or the tribes below us, since the demands for industrial labor, however great, are to be met in all coming times, not by quivering flesh and fibre, but by insensible substances—by the cheapest and most common—peat, turf, coal, wood and other fuels. But for this wonderful and most beneficent provision negroes would be captured and sold in greater numbers than ever. There would be no end to their enthralment.

Not only does the ultimate extinction of human slavery depend

on it, but the complete subjugation of the earth and the application of all its resources to human happiness.

To make manifest this glorious truth to other races is among the great duties of the leading race.

We perceive then that Nature, so much ignored on account of her slow and silent movements, has a potent voice in this matter of Slavery, and speaks on it, as she has often spoken, with more effect from the Factory than from the Halls of Legislation. Notwithstanding our political and civil machinery, it is she that shapes our ends, bend and rough-hew them as we will. Whatever other remedies may be prescribed, it will be found that as one body can only be moved by another, an old motor can only be displaced by a new one, equally effective and economical.

For every ill there is a remedy, but it does not always come from the quarter expected. The great social changes wrought in modern times is not the result of the sagacity and movements of statesmen—not a fraction of them. Legislators had no more to do with starting them than with the production of rain or snow. They knew not the cause till the effects loomed up before them, and then it seemed inexplicable from its apparent insignificance. And what is it that has made itself felt so beneficially over every part of the civilized world? Humiliating to the pride and power of rulers, it was nothing more than a common property of a common substance, turned to a new purpose—the simple *expansion of aqueous vapor*.

From the brevity of life, we are naturally impatient under Political pressures, and seek their immediate removal, but the habits of races and nations, as respects labor, are not to be changed in a day. Thoroughly to employ one common force, and successfully introduce another, has comprised periods so great as can only be counted in the life of the species. What ages transpired before the white man enslaved black ones, we know not, nor how many intervened before quadrupeds were tamed and made to labor for him, nor how vast the intervals before wind and moving water were pressed into his service. But this we know, that we live in a transition age—

at the beginning of an epoch that will be ever memorable for the evolution of productive forces from *inert* matter—of forces designed to meet deficiencies of preceding ones, and by their extension to diverse departments of labor, gradually to contract the areas and extinguish the evils of slavery.

As every one knows, the first of these yet mastered is *steam*. It is unnecessary to detail here what social, civil, and even mental and moral results it has brought forth in little more than half a century, nor with what accelerated power it is adding to them. There is scarcely a department of the arts into which it has not been introduced, and positively not one in which its influence is not felt. It has changed the policy of nations, and is stimulating, beyond all precedent, their growth and prosperity. The hoisting power for bringing up the materials stored in the earth's cellars, and the chief working agent on her surface, its labors are, apparently, to be interminable, if not illimitable. It is now doing three, if not four, times more work than the manual force of the whole human family can do; and, in a century or two, will, in all probability, be doing a hundred times more. Fresh applications of it are being constantly projected. It has passed from the factory into the highways; and, at the present writing, attempts are making to take it into the prairies—to make it a general field-laborer—to plow and sow, as well as thresh, and bolt, and grind. It already gins cotton, besides spinning and weaving it; nor is there any insuperable obstacle to its planting, and hoeing, and picking it, or something equivalent to picking it. It expresses the juice from the sugar-cane; why not cultivate and reap it? The cereals, also, as well as the ordinary grasses? Kindred difficulties now overcome, appeared equally serious before they were conquered. Nothing is wanting but a proper combination of mechanical skill; and, when that is realized, slavery dies, and dies amid the hosannas of both pro and anti-slavery men.

Let us repeat. The proposition is, that unlimited amounts of force are to be drawn out of inert matter, and that mechanical ar-

rangements for applying them to the exhaustive labors of slaves, are alone wanting to put an end to the slave trade. This is Nature's plan, and therefore effectual, without being violent; mild, progressive, and conservative, injurious to no class, but advantageous to all interests. In it, the morals of slavery are reversed. The forces are without feeling, and the greater amount of work got out of them, the nearer we fulfil the intentions of the Creator respecting them. Human labor becomes improved in its character, and reduced in intensity or amount to what is essential to bodily health and mental vigor. Associated with intelligence, it becomes employed in the direction of other forces. The slave becomes an overseer.

There is then hope for the negro. His race is not destined to remain uninformed serfs. It is well to know that the day of his redemption will come, and better still, that it lies within our power to accelerate its coming; for though the Creator has provided the means, their employment is left to ourselves. Only, let us not complain that, that which He, for the wisest purposes and the best interests of our species, has made progressive, is not instantaneous.

Races and nations are what their agents of labor make them.—Savages are such because they use no power but their own, while the social, mental and moral habits improve as other forces are called in. The ancient world arrived at certain stages of progress and then stopped, because the forces in use could carry it no further. Neither the wisdom of Egypt, philosophy of India, ingenuity of Greece, nor the energy of Rome could urge it onward. In this respect the morals of Confucius, the teachings of Pythagoras, and the inspirations of the prophets alike failed.

An advance has now taken place, exceeding all previous movements, and why? Because the impulse has come from forces surpassing in energy and effect the old ones; and to them the improved and improving condition of the world, morally as well as physically, is due. Although all the gifts of nature and art are the products of physical forces, mechanical science is not yet recognized as the

great thing that it is. The principle or passion that inclines each class to magnify its importance may have its uses, but statesmen, lawyers, theologians, physicians, philosophers, merchants, farmers and others are unwittingly being borne forward as one body by engineers.

The fundamental law by which man rises in the scale of being as he adds to his stock of forces has not yet presented itself in its full bearings, to writers on either ethics or physies. They admit force, in a general way, to be of importance, but they treat it as an adjunct, or an ordinary element, rather than the principal one of human elevation. If there were a deep conviction that it is the essence of material acquisitions—that *all others are products of it*—would there not be more said and written about it? How few are they who teach that the forces constitute the acts in the world's great drama, and their applications the scenes into which the acts are divided—that they expand as human wants expand, and are ordained to appear in a natural sequence, by which each opens the way for its successor—that there is progress in the forces as well as in the products of the forces.

But if new forces are to supersede negro labor, *where* are they first to be drilled into it? The world at large is far from being prepared for the change, and may not be for ages, still there are places that seem nearly if not quite ready for it, and of them our own country is the most promising. The conflicts of opinion on slavery that have agitated and keep agitating the Union tend, and are perhaps necessary, to clear the way for it. Here are the inducements, the means and the men—the science and the skill—to devise the plans, with the best of opportunities to improve and mature them. It is of course admitted that a change in old established systems of labor can only be a matter of time, but it has begun with us. It has even progressed so far as to relieve white and black men from some of the severest of predial labors.

Doubtless there are those who will deride the proposed solution of the great social and political problem as visionary; but of the

marked changes that have, within half a century, come over the world which did they perceive ere they saw and felt it in its effects. Not a few will question the practicability of applying portable expansive forces to the extent advocated. Alleged 'difficulties' will make them hesitate. Difficulties! Why the greatest are not to be compared to many that have been overcome in our times, in gas-lighting, railroads, steamships and carriages, steam presses, ploughs, reapers and looms, in the telegraph, tubular bridges, photography and other matters, down to the sewing machine. Difficulties!—Why, nothing great can be produced without them. Not even great men. Tell practical men of high and firm purpose, that progress is about ended in the substitution of inorganic forces for muscular power and they will laugh you to scorn. They will tell you, and tell you truly, that the great work is barely begun.

It may be objected that the substitution implies a change for which society in slave States is not prepared and an advance in the arts not attained. Suppose this conceded, is it less a duty to look forward on this subject than on others less important? When streaks of dawn break through the monotony of a long night of gloom, we know sun-rise is near; and shall we not hail as harbingers of day discoveries that *have* dispersed clouds which for ages have hung over the social sky.

Others again may think the change involves not only a 'higher law' but anticipates the highest and last one. They are right. Wherever slavery is rendered commercially impossible by the superior economy and efficieney of inanimate forces, *there* the ultimate law has begun to prevail. But then, say they, when once we enter upon such a state of things progress must be at an end. Assuredly not. It would be but the commencement of a series of developments that require an eternity to perfect and exhaust. As regards the DAY of Science and Discovery, whatever self-love may suggest to the contrary, we only live in the first blush of the morning.

Most certain it is that no amount of living power can meet the

demand for productive labor which science and the arts now require, nor can the earth raise slaves enough to meet incoming requisitions. The forces referred to, can alone do that. May we not then suggest to friends of the negro the formation of *Societies for promoting the application of inanimate forces to the raising and reaping staple products of tropical and semi-tropical regions.* There would be nothing impracticable in the project, since it is only to extend to the field a part of what has already been effected in the factory. And surely, discussion and the offer of suitable premiums, would tend to *hasten* the accomplishment of an object honorable to man in his highest estate. It is impossible to name a project in which good men of all creeds, classes, and professions can more hopefully unite to further the best interests of humanity than this ; or one by which governments can make larger amends for the miseries that have flowed from the dissipation of wealth and destruction of life in wars.

Is there any risk in asserting, that if a moiety of the influence and money expended by England and America during the last ten years for suppressing the Slave Trade, had been devoted to the extension of inorganic forces to slave labor, the market prices of negroes in the United States had now been reduced to African standards, and a fruitful element of National strife rendered innoxious, if not annihilated ?

As respects emancipation, nature's policy is different from ours. With her, release from servile toil is obtained, not by getting rid of the work but by doing more of it and doing it better. Any system different from this she ignores. But though 'more work' is her motto, there is nothing cruel or unkind in it, but the contrary, since the requisite forces are provided. In them we have her parable of the Talents. Labor—free, cheerful, enlightened labor is forever to be the root and spring of human advancement. One race cannot do the work of another. The highest must do its own to maintain its position, and hence it is that in no factory is the purport of assembling employés more clearly implied or expressed

than by nature in this mundane establishment. ‘Work,’ ‘work,’ is labeled on every department. All her rules and regulations are based upon it, nor will she listen a moment to dispensing with it, or to its slightest diminution—no, not to abate human suffering. ‘Work’ then is never to cease, but to swell until all the earth’s forces are employed in improving the character and condition of every race; how beautiful the system, and benign, that accomplishes this with diminished demands on human bones and muscles by calling into activity the noble forces of the mind—a system which acknowledges no limits to labor saving devices, to the refinements of labor, nor to the intellectual growth of the laborers.

For progress, untrammelled and unbounded power is required, and we may have it in the inorganic forces. As they become multiplied, slaves will disappear from our plantations, for a piece of fuel costing less than the daily food of a negro will do more work in a day than several negroes. And as all people will ultimately have them, inducements to enslave negroes will finally pass away. The honorable task of introducing them to our species has been assigned to our race. Through them we are to direct the onward movements of the world. Let us, therefore, cast off dependence on old routines of labor and cherish the increase of laborers whose nerves and sinews are of iron. To skill and perseverance there is nothing impossible in this, and glory enough awaits those who take the lead in it.

Christians in theory, we are too often pagans in practice. Like him who cried on a God to drag his wagon out of the mire, we invoke the spiritual to bring about that which must come from the material. Like him we find it easier to believe than to labor, and like him we are doomed to experience that faith without works is nought. An increase of labor, or agents of labor will forever be indispensable to progressive civilization, and for it recourse *must* be had, not to ethical but to mechanical science; to nature not to Grace. Religion and morals have their appropriate spheres of action. They foster the virtues, but what virtue can harden steel,

increase the effect of a reaper, diminish friction, or add to the speed of a steamer ? They enforce industry but touch not the forces of industry. They may soften the hearts of task-masters, but to rely on them to relieve groaning masses from ' hard bondage in mortar and bricks, and all manner of service in the field ' is to indulge in desperate and hopeless expectations.

Let those then, who afflict themselves and harass others because of an evil they cannot remove, and whose end they see not, enlarge the circles of their thoughts and consider it in the light here contemplated, and they will no longer be in doubt of what is ordained to come to pass. They will learn what the means provided by nature for its extinction are, and become persuaded that without them, no amount of moral power can bring about what they desire. They will look out for ' signs ' of emancipation different from those they have been accustomed to dwell on, and acknowledge the agency of physical science to hasten its approach--and in so doing they will find themselves co-workers with nature, and therefore with God.

